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DETAILED DESCRIPTION**[Detailed Description of the Invention]****[0001]**

[Field of the Invention] This invention communicates with a data server through a communication network, and relates to the image communication system which circulates image data using these devices in an image display device and a camera list equipped with the function which transmits and receives image data.

[0002]

[Description of the Prior Art] In recent years, information machines and equipment with the image display section, such as a digital camera and a Personal Digital Assistant (PDA), can have spread widely, and can give communication facility to these devices, and various information can be exchanged now by connecting with a computer network using a communication line. The system which adds a photography person's recognition signal to the image photoed with the digital camera for the purpose of charged circulation of the image data on a network is proposed by JP,8-315106,A. That is, when the photography person (primitive owner of image data) of the photography image which circulates on a network is clarified and a third person uses this by adding a photography person recognition signal to a photography image, a photography person is made to pay a countervalue justly.

[0003] Moreover, when two or more users connect with a server at coincidence, each user is enabled to see the same image data, and while two or more persons look at a common image, the system which can edit the image data into coincidence is also proposed (JP,5-165932,A).

[0004]

[Problem(s) to be Solved by the Invention] However, devices, such as the conventional digital camera, have constraint in the capacity of an internal memory, and have the fault that record-keeping of many images cannot be carried out. Although applying the technique indicated by this point and JP,8-315106,A, transmitting a record image to a server, and making the burden of an internal memory light is also considered, since it is necessary to pay that countervalue (charge of use) if a communication line is generally used or a database is used, selection of a connection server and discernment of a user are very important problems. It is only having said that a recognition signal is added to a photography image for the purpose of the countervalue guarantee about secondary use of image data, and this point and this official report are not mentioned at all about the selection of a server (destination server) which should be accessed.

[0005] Moreover, the liquid crystal display is adopted as the image display section, and when many of devices which have this kind of image display function look at one screen by two or more persons, it has the problem that there are those who cannot be easily seen due to the directivity of liquid crystal. It is also thought of that apply the technique of a publication to this point and JP,5-165932,A, distribute image data to two or more sets of devices, and two or more persons enable it to observe the same image to coincidence.

[0006] However, this official report is [that the art in the case of editing a common image by two or more persons is only proposed, and], and when the approach of starting is only applied, following un-arranging produce it. Namely, since everybody can input a command freely from each device as a certain man directs "coma delivery" and a certain man directs "expansion" Temporarily, even if it adopts the Ruhr of not receiving other directions, the effect attains to all the members by selfish

actuation, and there is a fault that the image distributed to all the members is not manageable in generalization during processing of one command.

[0007] While this invention was made in view of such a situation, distinguishes those (user) who use a device, communicating with the server which the user has made a contract of automatically and transmitting and receiving image data, it aims at offering the image display device and camera on which the same image as two or more devices can be displayed, managing a distribution image in generalization by one set of a device. Moreover, this invention aims at offering the image communication system which makes it possible to offer distribution service of image data etc. using the device equipped with this communication facility.

[0008]

[Means for Solving the Problem] It is characterized by to be equipped this invention with a reading means read the individual humanity news recorded on the external record medium in order to attain said purpose, the communication link connecting means connected to the data server corresponding to the individual through a communication network based on the individual humanity news obtained with the aforementioned reading means, and an image-display means display the image which the image data distributed from the connected data server shows.

[0009] That is, the recording information of an external record medium is read with a reading means, and a specific person's individual humanity news recorded on the external record medium is incorporated to an image display device. And based on the incorporated individual humanity news, the data server beforehand matched with the individual is specified, and automatic connection is carried out to the server by the communication link connecting means. In this way, distribution of image data is received from the connected server, and the image which the image data shows is displayed with an image display means.

[0010] Thus, by using an external record medium, the user of an image display device can be registered easily and the data server according to a user can be accessed easily. In this case, the individual humanity news of the person equivalent to the owner (owner) of equipment is saved for the non-volatile storage means as owner ID. Once the owner registers his individual humanity news by establishing a means to set up Owner ID as user ID when there is no reading of the individual humanity news from a reading means, when using the equipment which takes for possession of it henceforth, the input of user ID can be omitted.

[0011] Moreover, when a power source is set to OFF as a means to delete the once set-up user ID, the setup may be deleted, and when reading of new individual humanity news is performed, the so-called post-input priority type of renewal means of user ID automatic may be adopted so that the user ID set up previously may be deleted and the individual humanity news inputted later may be set up as new user ID.

[0012] Furthermore, when different user ID from Owner ID is set up, while establishing a user acknowledge request means to require resetting of user ID after fixed time amount progress, when not obtaining a predetermined response to a demand of this user acknowledge request means, it can prevent using user ID other than owner unjustly by establishing a user ID setting deletion means to delete a setup of user ID. Especially this mode has the security effectiveness, when using a charged communication network etc.

[0013] Moreover, the mode which uses two or more image display devices concerning this invention is also possible. While setting up a leading status about one set of an image display device among two or more sets of the image display devices with which the same individual humanity news was read in addition to the above-mentioned configuration in order to plan expansion in this case With a master-slave relation setting means to set up a dependent position about other image display devices If a leading status is set up, based on the operator command from the image display device concerned, two or more sets of said all image display devices will be controlled in generalization. When a dependent position is set up by said master-slave relation setting means, it is characterized by having the control means which receives control according to the operator command from the image display device with which other leading statuses were set up.

[0014] According to this invention, by registering the individual humanity news of the same person as two or more sets of image display devices, the same image as two or more image equipments can be displayed, and two or more persons can see the same image. It restricts to one set of the image

display device with which the leading status was set up especially, top delivery and image actuation of expansion/contraction are attained, and the image displayed on the image display device of other dependent positions can be controlled in generalization.

[0015] In this case, a subordination discharge means cancel the subordination condition receive rule of the generalization-control by the image display device with which the leading status was set up may be established, and you may constitute so that it may change alternatively to one condition of the independent conditions of not receiving the generalization-control by the image display device with which the subordination condition or said leading status was set up according to actuation of a change means. According to this mode, there is an advantage that it can respond also to individual demand of wanting to operate it freely, without receiving control by the image display device of a leading status.

[0016] Moreover, the image pick-up means which consists of image pick-up optical system and an image sensor at least in order that this invention may attain said purpose, The signal-processing section which processes the video signal read from said image pick-up means, and generates image data, A reading means to read the individual humanity news recorded on the external record medium, and the communication link connecting means connected to the data server corresponding to the individual through a communication network based on the individual humanity news obtained with the aforementioned reading means, It is characterized by having a data transmitting means for transmitting said image data to the connected data server.

[0017] Moreover, it is desirable to constitute so that the image which the 2nd image data distributed from the data server which prepared the image display section which displays the image photoed with said image pick-up means, and was connected by said communication link connecting means shows may be displayed on said image display section. According to this invention, the recording information of an external record medium is read with a reading means, and a specific person's individual humanity news recorded on the external record medium is incorporated to an image display device. And based on the incorporated individual humanity news, the data server beforehand matched with the individual is specified, and automatic connection is carried out to the server by the communication link connecting means. It becomes unnecessary in this way, to establish a means (memory) to accumulate image data in a camera side in large quantities, by transmitting the data of a photography image to the connected server. Therefore, a photograph can be taken, without caring about photography number of sheets.

[0018] Furthermore, other cameras with which the same individual humanity news was read in addition to the above-mentioned configuration in order the mode which uses two or more cameras concerning this invention is also possible and to plan expansion in this case and means of communications between cameras which communicates. While setting up a leading status about one camera among two or more cameras with which the same individual humanity news was read If a leading status is set up by master-slave relation setting means to set up a dependent position about other cameras, will transmit the operator command from the camera concerned to other cameras through the means of communications between said cameras, and said all two or more cameras will be controlled to coincidence. If a dependent position is set up by said master-slave relation setting means, it will be characterized by having a control ***** camera control means according to the operator command distributed through the means of communications between said cameras from the camera with which other leading statuses were set up.

[0019] It becomes possible to control the camera of other dependent positions in generalization by this registering the individual humanity news of the same person as two or more sets of image display devices, and operating the camera which set up this leading status by setting a leading status to one of sets [them]. A panoramic exposure, 360-degree photography, etc. which followed, for example, put two or more cameras in order are possible.

[0020] A storage means to memorize the individual humanity news for two or more persons read with the aforementioned reading means in order to plan expansion of the camera concerning this invention, When the individual humanity news for two or more persons is incorporated from two or more external record media with the aforementioned reading means It connects with the data server corresponding to everybody, respectively, and is characterized by adding the communications control section which controls said communication link connecting means and a data transmitting

means to distribute said image data to each data server.

[0021] According to this invention, two or more persons' individual humanity news can be registered into one camera, and the same image data can be transmitted all at once to the data server corresponding to the everybody who memorized for the storage means. Thereby, while taking a photograph with one camera, the image data can be automatically transmitted to two or more servers, and the troublesomeness of an extra copy can be canceled.

[0022] Moreover, according to other modes of this invention, it is characterized by establishing an information addition means to add and record the individual humanity news for two or more persons read with the aforementioned reading means on a photography image. In this mode, if a photograph is taken by incorporating to a camera the individual humanity news of the everybody who become a photographic subject, for example when taking two or more persons' snapshot, each one of individual humanity news will be subordinately recorded on the photography image. Therefore, it can grasp whether the information is in ***** in a photography image at a key, this additional information can be utilized, and image retrieval can be performed.

[0023] Furthermore, a data server with a data storage means by which image data is accumulated in order that this invention may attain said purpose, It is the image display device connected with said data server through a communication network connectable with said data server, and a communication network. A reading means to read the individual humanity news recorded on the external record medium, the communication link connecting means connected to the data server corresponding to the individual through a communication network based on the individual humanity news obtained with the aforementioned reading means, And the image display device possessing an image display means to display the image which the image data distributed from the connected data server shows, It is characterized by constituting an image communication system as resemble a distribution means to distribute image data to each image display image equipment from a data server according to the directions from said image display device.

[0024] According to this invention, based on the individual humanity news read from the external record medium, the data server corresponding to the individual can be accessed, and offer of image data can be received from a data server. It becomes possible to require payment of a tariff of the person using service justly by establishing a tariff calculation means to calculate a tariff so that one [at least] tariff of the use tariff of a communication network and the offer tariffs of the image data from a data server may be imposed to the individual, based on the individual humanity news especially obtained with the aforementioned reading means.

[0025] A data server with a data storage means by which image data is accumulated in order that this invention may attain said purpose, It is the camera connected with said data server through a communication network connectable with said data server, and a communication network. The signal-processing section which processes the video signal read from the image pick-up means which consists of image pick-up optical system and an image sensor at least, and said image pick-up means, and generates image data, It is based on the individual humanity news obtained with a reading means to read the individual humanity news recorded on the external record medium, and the aforementioned reading means. The camera possessing the data transmitting means for transmitting said image data to the communication link connecting means connected to the data server corresponding to the individual through a communication network, and the connected data server, It is characterized by constituting an image communication system as resemble a data registration means to make the image data transmitted from said camera register and store in a corresponding data server.

[0026] According to this invention, based on the individual humanity news read from the external record medium, the data server corresponding to the individual can be accessed, a photography image can be transmitted to a server, and image data can be stored up in a server side. In this case, it is also possible to ask the user of this system for a use tariff justly by having a tariff calculation means to calculate a tariff so that one [at least] tariff of the tariffs for registering image data into the toll and server of said communication line network to that individual may be imposed based on the individual humanity news obtained with the reading means.

[0027] Moreover, according to other modes of this invention, it sets to the image communication system of the above-mentioned configuration. A storage means to memorize the individual humanity

news for two or more persons read into said camera with the reading means, A means to transmit others' individual humanity news to at least one person's data server of them when the individual humanity news for two or more persons is incorporated from two or more external record media with the aforementioned reading means, A transfer means to transmit image data to the database corresponding to those others based on the individual humanity news of others who were made to possess and were transmitted from this camera, It is characterized by having the 2nd data registration means which makes the image data which received the transfer from said transfer means register and store in a data server.

[0028] According to this invention, the images photoed with one camera can be distributed to two or more servers all at once by making the image data which transmitted to one data server transmit among other data servers (transfer between servers).

[0029]

[0025]
[Embodiment of the Invention] It explains in full detail about the gestalt of desirable operation of an image communication system in the image display device and camera list which start this invention according to an accompanying drawing below. Drawing 1 is the perspective view showing the example of an appearance of the digital camera with which this invention was applied. The image pick-up section 12 is formed in the transverse-plane upper right corner of a digital camera (it is only hereafter written as a camera.) 10, and, as for the left-hand side section of a camera 10, the grip section 14 is formed. The image pick-up section 12 has a taking lens, and CCD (image sensor) which is not illustrated is arranged behind the taking lens. Although the configuration of a taking lens is not illustrated, the rear focus type zoom lens which consists of a variable power group and an amendment group is used, for example.

[0030] The shutter release 16, the mode dial 18, and the electric power switch 19 grade are arranged on the top face of a camera 10. Moreover, the card read station 20 is formed in the right lateral of a camera 10, and if it lets ID cards 22 (equivalent to an external record medium), such as a credit card, pass into the slot of this card read station 20, the information currently recorded on ID card 22 will be read, and it will be incorporated in a camera 10.

[0031] Individual humanity news (ID information), such as accounting places, such as the person's identifier, sex, a birth date, a correspondent bank, and the account number, is beforehand recorded on the Records Department 23 of ID card 22 as magnetic information, for example. In addition, ** which has shown the example which reads ID cards 22, such as a credit card, may not limit especially the gestalt of the card as an external record medium, a magnetic card is sufficient, and an IC card is sufficient in this drawing. Moreover, the method of magnetic, optical, and electromagnetic ***** is sufficient also as a reading method.

[0032] Drawing 2 is the rear view of the camera of drawing 1. The single image display section 24 is formed in the tooth back of a camera 10. This image display section 24 consists of liquid crystal displays (LCD), and a touch panel 26 is arranged in that front face. Although not illustrated in detail, various kinds of manual operation buttons can be piled up and displayed on the screen of the image display section 24, and various kinds of actuation inputs can be performed by touching a desired manual operation button through a touch panel 26.

[0033] Drawing 3 is the block diagram showing the internal configuration of the above-mentioned camera 1. As the camera 10 mainly consisted of CCD (image sensor)30, the image pick-up circuit 32, memory 34, a central processing unit (CPU) 36, the image display section 24, the communication link interface 38, an actuation key control interface 40, an ID input interface 42, and external storage interface 44 grade and showed each of these elements to drawing 3 , it is connected through the bus 46.

[0034] In CCD30, photo electric conversion of the photographic subject image which carried out image formation to the light-receiving side of CCD30 through the taking lens of the image pick-up section 12 is carried out, and it is read one by one as a video signal. The image pick-up circuit 32 includes digital-image-processing circuits, such as a luminance-signal generation circuit, a color-difference-signal generation circuit, and a gamma correction path, etc. in analog processing circuits, such as a CDS clamping circuit and a gain equalization circuit, an A/D converter, and a list like common knowledge, although the detailed configuration is not illustrated including the signal-processing section.

[0035] The video signal read from said image pick-up section 12 is suitably processed in said image pick-up circuit 32, is recorded on memory 34 (for example, flash memory with a built-in camera) according to the predetermined format of an Exif (Exchangeable image file format) file convention and others, or is recorded on the Records Department, such as an external memory card which can be detached and attached freely, through the external storage interface 44.

[0036] Moreover, after the video signal read from the photography section 12 and the video signal read from memory 34 (or external memory which can be detached and attached freely) are processed in said signal-processing section, it is led to the image display section 24, and a photography image is displayed on the screen of the image display section 24. Not only the still picture photoed by shutter release actuation but the image before shutter release actuation (an animation or intermittent drawing) can be displayed on this image display section 24.

[0037] In addition, this camera 10 possesses the well-known automatic exposure adjustment (AE) function and the automatic focus (AF) function, a photography person only turns a camera to a photographic subject, and optimal exposure adjustment and focus doubling are performed automatically. A camera 10 can receive information, such as image data, from a server machine while being able to transmit information, such as image data of the image which the server machine of a computer network and a communication link are possible, and was photoed with the camera 10, to a server machine through the communication link interface 38.

[0038] The actuation key control interface 40 receives the input of an actuation signal from the shutter release 16 prepared in the case section of a touch panel 26 or a camera 10, or the control unit of mode dial 18 grade while transmitting the display-control signal of the manual operation button piled up and displayed on the image display section 24. ID input interface 42 receives the input of the information on ID card 22 read by said card read station 20 while transmitting the reading control signal of said card read station 20.

[0039] While CPU36 generalizes and controls each circuit of a camera 10, distinguishing operator guidance based on the signal inputted from the actuation key control interface 42 and performing control according to actuation, control of the image pick-up section 12 for photoing zooming, focusing, etc., the display control in the image display section 24, writing / read-out control of the data to memory 34, communications control with a server machine, etc. are performed.

[0040] Drawing 4 is the block diagram showing the outline configuration of the image communication system concerning the gestalt of operation of this invention. A camera 10 minds the communication line networks 50, such as a dial-up line network or a dedicated line, and is Servers (data server) 52A and 52B. -- 52n and connection are possible. In addition, although the situation of the computer network containing two or more servers is shown in this drawing, especially the number of servers is restricted and there should just be one or more in the foil and a theoretical target.

[0041] Each servers 52A and 52B -- Databases 53A and 53B which accumulate image data in 52n -- 53n is prepared, and while the image data photoed with the camera 10 is sent to server 52A-- and saved at database 53A--, the image data registered into the database can be distributed to a camera 10 or other servers.

[0042] Those (user) who use a camera 10 call the image data which could accumulate the image data to which self photoed a specific server (for example, server shown by sign 52A) and a specific use contract to the server 52A by installing a home server in an epilogue or a house etc., and was registered into database 53A, and can reproduce it in the image display section 24 of a camera 10.

[0043] Next, an operation of the camera and image communication system which were constituted is explained like the above. The conceptual diagram of the use gestalt of the above-mentioned camera 10 is shown in drawing 5. When using a camera 10, a user's individual humanity news (user ID) is first registered into the card read station 20 of a camera 10 through ID cards 22, such as a credit card of those (user) who use a camera 10. By this user registration, while the connection place server 52 is determined, accounting places, such as dues of the communication line network 50 and server dues, are determined.

[0044] However, since it is inconvenient to require the user registration of self each time when the owner (owner) of a camera 10 uses a camera 10, when owner's individual humanity news (owner ID) is beforehand inputted from a credit card etc., it registers with the nonvolatile memory in a camera

10 etc. and there is no user ID registration, it is desirable to set up Owner ID as user ID.

[0045] In this way, if a photograph is taken by pushing the shutter release 16 of a camera 10 after registering user ID, the server 52 which the registered user has made a contract of will be accessed automatically, and the data of the image which judged and photoed the quality of a communication link situation will be transmitted to a server 52. The image data sent to the server 52 is registered and saved in a predetermined record section (database).

[0046] The flow of the above-mentioned processing is shown in the flow chart of drawing 6. ON of the electric power switch 19 of a camera 10 distinguishes first whether user registration is performed (step 102). (step 101) In performing user registration, subsequently to the card read station 20, ID cards 22, such as a credit card, are inserted and it registers user ID based on the individual humanity news read from ID card 22 (step 104). On the other hand, in not performing user registration at step 102, it registers the owner ID registered beforehand as user ID (step 106). In this way, the registered user ID determines a connection place server and an accounting place.

[0047] Subsequently, directions of photography are received. If a shutter release 16 is pushed and shutter release turns on (step 108), the predetermined server 52 which the registered user has made a contract of will be accessed, and communication link connection will be made (step 110). The quality of a communication link condition is judged after connecting with a server 52 (step 112), and if good, the data of the photoed image will be transmitted to a server 52, and it will record on the predetermined record section (database) of a server 52 (step 114).

[0048] On the other hand, when it is judged that a communication link condition is bad, subsequently the capacity of the memory (body memory) 34 of camera 1 body is checked (step 116), and in step 112, when there is sufficient memory capacity, record-keeping of the image data is temporarily carried out to the body memory 34 (when it is more than predetermined capacity) (step 118), and it waits for recovery of a communication link condition, and when good, the image data is transmitted to a server 52 (step 120). When it is specifically judged that a communication link condition is bad, a communication link is stopped temporarily, and communication is again tried after fixed time amount progress. Thus, waiting and a communication stage are automatically adjusted for recovery of a communication link condition, repeating standby and re-communication of fixed time amount. In addition, even if it sets an upper limit as the time amount which stands by recovery of a communication link condition and carries out predetermined time progress, when a communication link condition is not improved, you may make it give up a communication link.

[0049] Moreover, at step S116, when the capacity of the body memory 34 is inadequate, record-keeping of this photography image cannot be carried out (step 122), but the alarm display of that is carried out to the image display section 24, and photography is ended. Although the flow chart of drawing 6 described the case where access was started to a server 52, after the shutter release ON, it may access to a server 52 immediately after registration of user ID, and connection may be checked.

[0050] Moreover, the mode which sets up the connection server ID and the accounting place ID separately, respectively in the case of registration of user ID is also possible. For example, about the accounting place of the communication line dues when using the server using the connection server ID of the server which the person A by whom owner registration is done has made a contract of about a connection server, and the charge of server use, using the accounting place ID of the credit which the person B by whom user registration was done has made a contract of is also considered. Moreover, when the configuration which can register both ID of user ID with Owner ID is adopted in this way, re-reading of the credit card of the user who registered is required and reinput stops for every time amount progress fixed when user ID other than Owner ID is registered, it is desirable to have the function which deletes user registration. Thereby, when persons other than owner use a camera, the accounting place needs to always be carrying clear user ID cards (credit card etc.), and there is the security effectiveness.

[0051] Next, the example of the deletion approach of the registered user ID is explained. Although various approaches can be considered in order to delete the user ID registered into the camera 10, in the following cases, registration of user ID is deleted, for example. That is, when the power source of the ** camera 10 is set to OFF, user ID registration is deleted, and when the power source of a camera 10 is switched on next time, registration of user ID is required anew and new registration is not performed, he is set as a camera, using Owner ID as user ID.

[0052] ** Delete user ID by making it shift to user ID deletion mode, and performing the actuation input of registration deletion by predetermined actuation of the mode dial 18, an actuation key, etc., to delete user ID in powering on of a camera 10. In this case, it is desirable to display the purport by which user ID was deleted by the image display section 24 by the message.

** When user ID is newly registered, the user ID set up previously (current) is deleted automatically, and may be made to be rewritten by new user ID. However, in the case of the mode in which the user ID for two or more persons is registered into one camera 10, it is made not to perform this renewal function of automatic.

[0053] ** When adopting ID input method of a contact process like a magnetic card, shift to the mode (check mode) in which user ID is checked for a certain fixed time amount progress of every, and urge plug processing of ID card 22 again. At this time, if the reclosing of ID card 22 is not performed, user ID will be deleted automatically. Moreover, when the communication link with a camera 10 and its ID card 22 stops during a fixed period, in the case of the gestalt which inputs user ID by non-contact by the electromagnetic communication mode, it may judge that the distance of ID card 22 and a camera 10 separated (the user who registered separated from the camera 10 and those who use it changed), and it may delete user ID automatically. Thereby, unapproved use of others' user ID can be prevented and security can be secured. In addition, by this approach, when user ID is deleted, Owner ID is automatically set up as user ID.

[0054] Since deletion is performed without complicated processing of a password input etc. on the occasion of deletion of the user ID by the approach of above-mentioned ** thru/or **, it is convenient. However, about Owner ID, it is desirable to require processing of a password input etc. and to prevent from deleting easily. Next, the function to register one person's individual humanity news into two or more cameras is explained.

[0055] Drawing 7 is a conceptual diagram of a gestalt which registers one ID information into two or more cameras. The example into which the same person's ID information was made to read with same ID card 22 as three cameras 10A, 10B, and 10C is shown by this drawing. If same ID card 22 as the card read stations 20A, 20B, and 20C of each cameras 10A, 10B, and 10C is inserted one by one, the user ID of the same person as each cameras 10A, 10B, and 10C will be registered.

[0056] Thus, when the same user ID as two or more cameras 10A, 10B, and 10C is registered, each cameras 10A, 10B, and 10C can make sequential connection to the same server 52, and can receive distribution of image data from the server 52. The image same in the image display sections 24A, 24B, and 24C of each cameras 10A, 10B, and 10C at the time of playback is displayed by this, and the displeasure at the time of seeing one liquid crystal display monitor by two or more persons like before can be canceled.

[0057] Moreover, when a means to communicate mutually with cameras especially is provided, the mode of only one camera (for example, sign 10A) connecting with a server 52, receiving distribution of image data from the server 52, performing pictorial communication between cameras to other cameras (10B, 10C), and transmitting the same image is also possible. Thereby, there is a merit that the burden of the dues of the communication line network 50 or the charge of server use is mitigable.

[0058] Although it is also possible to use it according to an individual, respectively when the same user ID as two or more cameras 10A, 10B, and 10C is registered like drawing 7, the camera of these two or more bases is also controllable by the actuation from one camera in generalization. That is, a leading status is set up about specific one of two or more cameras which registered the same user ID, and let this be a master camera. The dependent position which follows actuation of said master camera about other cameras is set up, and let these be slave cameras.

[0059] For example, in the register mode of user ID, it is possible to set up the camera which registered user ID first as a master camera. In this case, since it can recognize by the server 52 side that the same user has already connected with this server 52 when the camera (temporarily referred to as sign 10A in drawing 7) registered first connects with a server 52 first and the camera (sign 10B) registered into the degree connects with a server 52, a setup of a master camera and a setup of a slave camera are possible by the connection sequence to a server 52.

[0060] Moreover, in changing into other cameras the status of the master camera set up once, like drawing 8, a master camera (sign 10A) is operated and it inputs directions of master camera

modification. If this modification actuation is performed, all the cameras 10A, 10B, and 10C that have other same user ID will become master ID input mode, and the message to which a master setup is urged will be displayed on each image display sections 24A, 24B, and 24C. If ID card 22 is inserted about one desired camera (for example, sign 10C) in this condition and ID registration is performed, that camera (sign 10C) will newly turn into a master camera.

[0061] After setting up a master/slave, actuation of all cameras is controllable by operating a master camera. For example, if coma delivery is operated from a master camera at the time of playback, coma delivery of the image of all cameras will be carried out to coincidence, and if directions of expansion/contraction are inputted from a master camera, the image of all cameras will be expanded or reduced to coincidence. Therefore, by having provided this function, it cannot only stop at the application of the camera for photography, but can use also as presentation tools, such as a meeting.

[0062] Moreover, control of release etc. can do all the cameras with which the same user registration is carried out at the time of photography in actuation of one master camera. Therefore, the panoramic exposure which put two or more cameras in order, and an activity required in order for photography etc. to synchronize 360 degrees and to take a photograph are easily realizable. The flow of the processing mentioned above is shown in the flow chart of drawing 9 and drawing 10.

[0063] The flow of processing in the case of carrying out the same user registration and reproducing is shown in two or more cameras at drawing 9. ON of the power source of each camera (a camera 1, camera 2 --) distinguishes whether user registration is performed for every camera (step 132). (step 131) Although the processing when not performing user registration is not illustrated, it registers Owner ID as user ID like step 106 shown by drawing 6, and shifts to the usual photography or a reproductive sequence.

[0064] When performing user registration at step 132, the same ID card as each camera (a camera 1, camera 2 --) is inserted one by one, and user ID registration is performed (step 134). At this time, the camera (for example, camera 1) which inserted the ID card first is set up as a master camera. If a master camera is operated and a playback switch is turned on (step 136), an instruction (command) of playback initiation will be notified to all other slave cameras, and will access each camera at the predetermined server 52. And distribution of image data is received from a server 52, and image reconstruction is started (step 138). In addition, image reconstruction may be performed by only a master camera receiving distribution of image data from a server 52, and transmitting the image data to other slave cameras by the communication link between cameras between cameras, when pictorial communication is possible.

[0065] Subsequently, if directions of coma delivery are inputted from a master camera (step 140), the command of the coma delivery will be notified to all slave cameras. And based on these coma delivery directions, the image data of degree coma is distributed from a server 52, and degree image reconstruction is performed (step 148). At this time, about a slave camera (a camera 2, camera 3 --), when a master camera and a communication link of a slave camera are possible, the image data of the following coma is received, when the communication link with a master camera is impossible, the image data of degree coma is directly acquired from a server 52, and degree image reconstruction is performed by (step 142), the master camera (camera 1), and the communication link between cameras (step 150).

[0066] In addition, although drawing 9 described processing of coma delivery to the example, the same is said of processing of expansion/contraction. In this way, while being able to display the same image as all cameras, the image distributed to all cameras is systematically manageable with a master camera. However, since it is thought that individual demand of wanting to observe the image freely is also produced without receiving rule of a master camera while observing the same image with two or more cameras, in each camera, the change means of online/off-line may be established. And when he wants to observe an image individually, an off-line change is performed, and the control from a master camera is canceled temporarily. In this case, if an online change is performed after that, the same processing as other cameras can be started, and it can return to the group who receives rule with a master camera.

[0067] The flow of processing in the case of taking a photograph by carrying out the same user registration is shown in two or more cameras at drawing 10. ON of the power source of each camera (a camera 1, camera 2 --) distinguishes whether user registration is performed for every camera (step

162). (step 161) Although the processing when not performing user registration is not illustrated, it registers Owner ID as user ID like step 106 shown by drawing 6 , and shifts to the usual photography or a reproductive sequence.

[0068] When performing user registration at step 162, same ID card 22 as each camera (a camera 1, camera 2 --) is inserted one by one, and user ID registration is performed (step 164). At this time, the camera (for example, camera 1) which inserted ID card 22 first is set up as a master camera. If the shutter release 16 of a master camera is pushed and release is directed, the release command will be notified to all other slave cameras, and will access each camera at the common server 52. And the image data of a photography image is transmitted to the server 52 from each camera (a camera 1, camera 2 --) (step 168). In this way, release of all cameras can be performed by release actuation of a master camera, and it is effective especially when [like a panoramic exposure] release needs to be carried out synchronously.

[0069] Drawing 11 is a conceptual diagram of other gestalten which registers one ID information into two or more cameras. While registering the same user ID as two cameras 10A and 10B and performing playback actuation, you may enable it to register the user ID same about camera 10C afterwards (it registers the middle). playback of two cameras 10A and 10B -- if it lets ID card 22 pass to card read station 20C of camera 10C and the same user ID as other two cameras 10A and 10B is registered working -- this -- on the way -- the same image is displayed on registered camera 10C from the timing which can take other cameras 10A and 10B and a synchronization. In this way, it can participate in the group at any time during playback actuation.

[0070] Next, the mode which registers two or more user ID into one camera is explained. Drawing 12 is a conceptual diagram of a gestalt which registers ID information for two or more persons into one camera 10. The example into which ID information for 3 persons is made to read with ID cards 22A, 22B, and 22C which are different to one camera 10 is shown by this drawing. If ID cards 22A, 22B, and 22C are inserted in the card read station 20 of a camera 10 one by one, different persons' A, B, and C individual humanity news currently recorded on each ID cards 22A, 22B, and 22C will be incorporated by the camera 10, and will be recorded on memory.

[0071] The person A by whom user registration was done has the self data area in server 52A, and Persons B and C have each one of data areas in Servers 52B and 52C, respectively. Thus, if a photograph is taken with the camera 10 which registered two or more user ID, at the time of release, it will connect with the servers 52A, 52B, and 52C corresponding to the everybody objects A, B, and C automatically, and a photography image will be transmitted to each servers 52A, 52B, and 52C. Thereby, the troublesomeness of an extra copy is cancelable by performing ID registration of the person taken a photograph, such as snap photography.

[0072] Moreover, after connecting with any one server and transmitting image data to the server instead of connecting with each servers 52A, 52B, and 52C, you may make it send the same image data to other servers by the transfer between servers through a communication network from the server. The flow chart of above-mentioned processing is shown in drawing 13 . ON of the electric power switch 19 of a camera 10 distinguishes first whether user registration is performed (step 172). (step 171) In performing user registration, subsequently to the card read station 20, ID cards 22, such as a credit card, are inserted and it registers user ID (step 174).

[0073] Processing of step 172 - step 174 is repeated after user ID registration until return and the user registration for two or more persons complete processing to step 172. And in completing the user registration for two or more persons and not performing user registration at step 172, subsequently it receives directions of release (step 176). If a shutter release 16 is pushed and shutter release turns on (step 176), it will judge whether the image data transfer was ended to all the servers of each user by whom user registration is done (step 178). In having finished transmitting image data to all servers, each server 52 which the registered user has made a contract of is accessed, and it makes communication link connection (step 180).

[0074] And the quality of a communication link condition is judged after connecting with each servers 52A, 52B, and 52C (step 182), and if good, the data of the photoed image will be transmitted to each server, and it will record on a predetermined record section (step 184). On the other hand, in step 182, when it is judged that a communication link condition is bad, it waits for recovery of a communication link condition, and when good, the image data is broadcast again to a server (step

186).

[0075] Then, the above-mentioned processing step 178 - step 186 are repeated until processing transmits return to step 178 and finishes transmitting image data to all the servers 52A, 52B, and 52C. And processing will be ended if the transfer termination to all the servers 52A, 52B, and 52C is checked at step 178. Moreover, as another art, at step 176, an image data transfer may be performed after the shutter release ON only to the first user's server by which user registration is carried out (step 191), and this image data may be distributed by the transfer between servers to other users' server (step 192).

[0076] Moreover, record-keeping of the information on user ID may be added and carried out to the image photoed with the camera 10 with which two or more user ID was registered in this way. In this way, the information on the user ID added to the image serves as a key which grasps the person reflected to the photography image of snap photography, and can utilize the information on this user ID for the image retrieval at the time of playback etc.

[0077] Although the gestalt of the above-mentioned implementation explained the example which applied this invention to the digital camera, this invention is widely applicable to the device equipped with image display functions, such as not only a camera but liquid crystal display monitor equipment, and a Personal Digital Assistant (PDA).

[0078]

[Effect of the Invention] Since the individual humanity news of those (user) who use an image display device is read in an external record medium, and it incorporates in equipment and was made to connect with the data server corresponding to the user according to the image display device applied to this invention as explained above, each user can be easily registered into equipment, and the image data currently stored in each one of data servers can be called easily. Moreover, it becomes possible to grasp clearly the accounting place of the tariff generated in case server connection and offer of image data are received.

[0079] By using two or more image display devices especially applied to this invention, registering the individual humanity news of the same user as each image display device, and setting up a leading status about one of sets [them], all image display devices can be controlled by one equipment, and the same image can be observed to coincidence with two or more image display devices. Thereby, while it is utilizable also as for example, a presentation tool, the displeasure in the case of seeing one liquid crystal display monitor etc. by two or more persons like before is avoidable.

[0080] Moreover, even when the camera which can register each user easily for a camera since it connects with the data server corresponding to [according to the camera concerning this invention, read a user's individual humanity news in an external record medium, incorporate in a camera, and] a user and the data of a photography image were transmitted to the data server, and is applied to others' possession is borrowed, the data of a photography image can be automatically transmitted to their own data server. And grasp of accounting places, such as a telex rate at this time and a charge of server use, is also easy, and can ask ** and a user for payment of a just countervalue. And according to this camera, since the data of a photography image are stored in a data server, a means to memorize image data in large quantities in a camera becomes unnecessary, and a lot of photography can be performed, without caring about photography number of sheets.

[0081] Furthermore, all cameras are controllable by one camera by using two or more cameras concerning this invention, registering the individual humanity news of the same user as each camera, and setting up a leading status about one of sets [them]. Thereby, the release of two or more cameras can be controlled by one camera, and synchronous photography of a panoramic exposure, 360-degree photography, etc. can be performed easily.

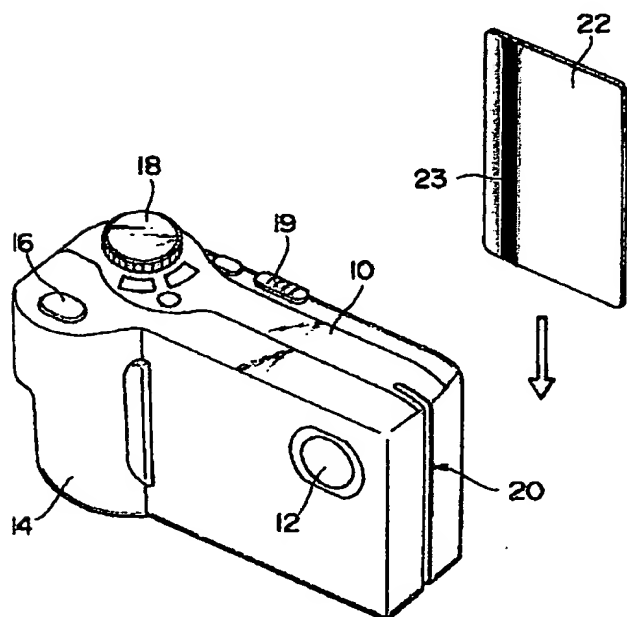
[0082] In addition, since the data of a photography image can be transmitted all at once to each user by registering two or more users' individual humanity news into one camera, there is also an advantage that extra copy processing of snap photography becomes unnecessary. Furthermore, by adding and recording this individual humanity news on an image, the person currently recorded on the image can be grasped easily and it can use also for image retrieval.

[0083] Since it was made to access the data server corresponding to the individual based on the individual humanity news read from the external record medium according to the image communication system concerning this invention, offer of image data can be easily received from

each one of data servers, and it becomes possible to register a photography image to each one of data servers simply. A user can be made to pay justly the toll of a communication network, the use tariff of a data server, etc. to the individual based on the individual humanity news especially obtained with the reading means.

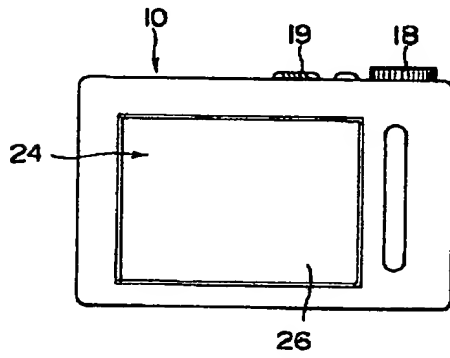
[Translation done.]

Drawing selection

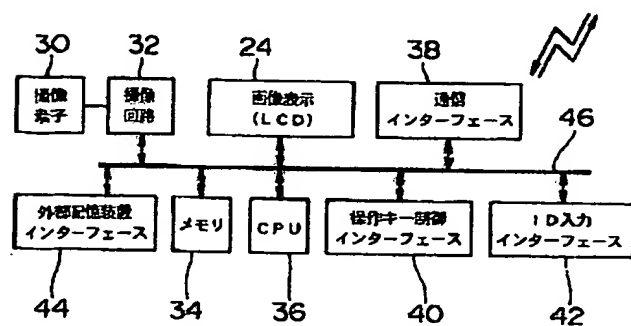


[Translation done.]

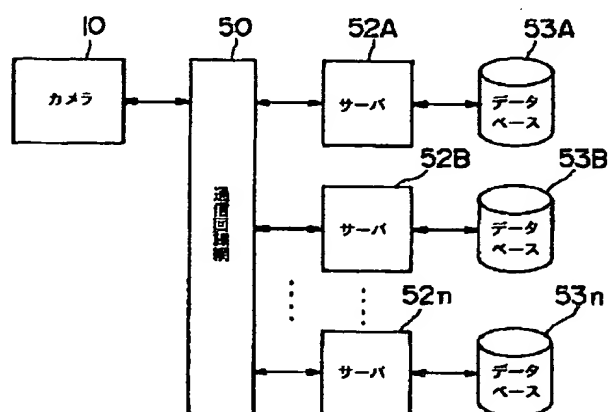
Drawing selection



[Translation done.]

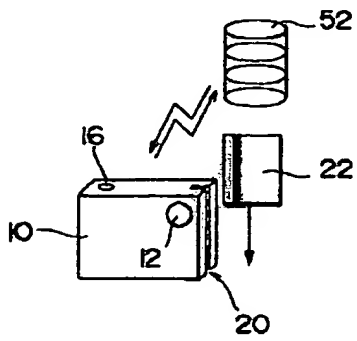
Drawing selection drawing 3

[Translation done.]

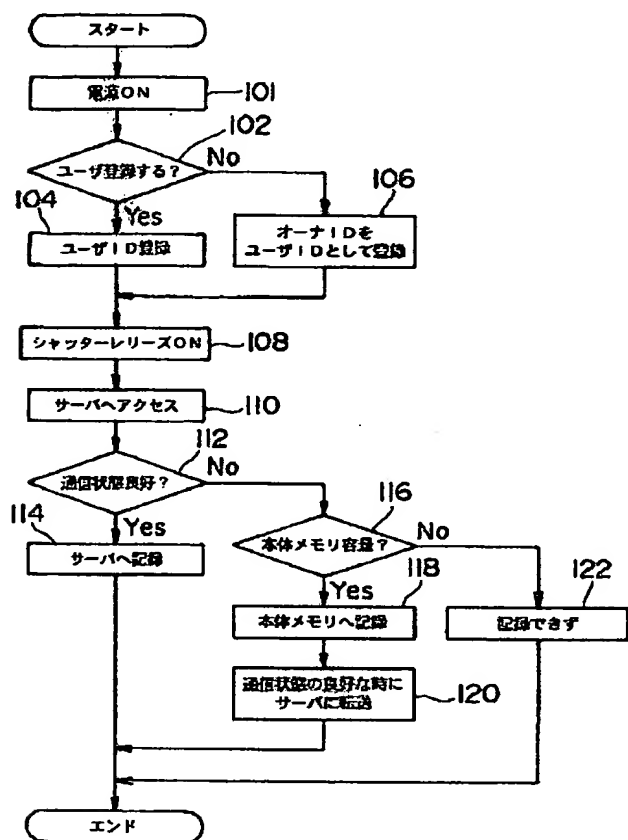
Drawing selection drawing 4

[Translation done.]

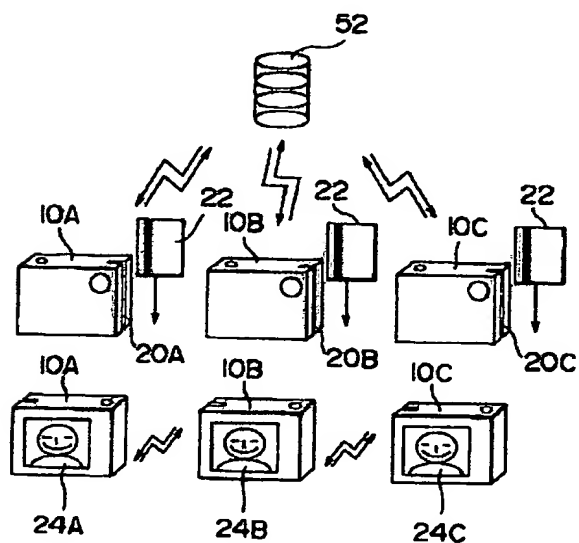
Drawing selection 



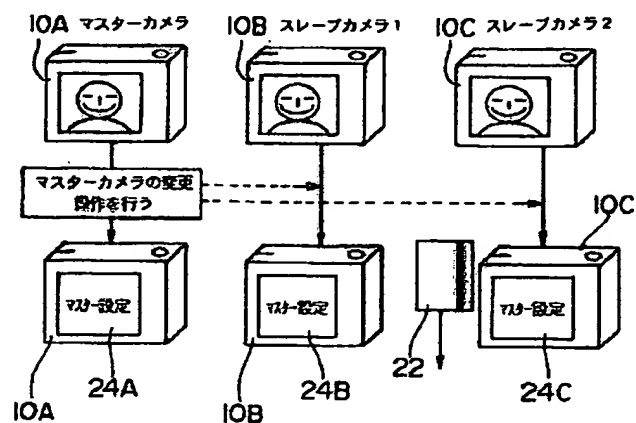
[Translation done.]

Drawing selection drawing 6

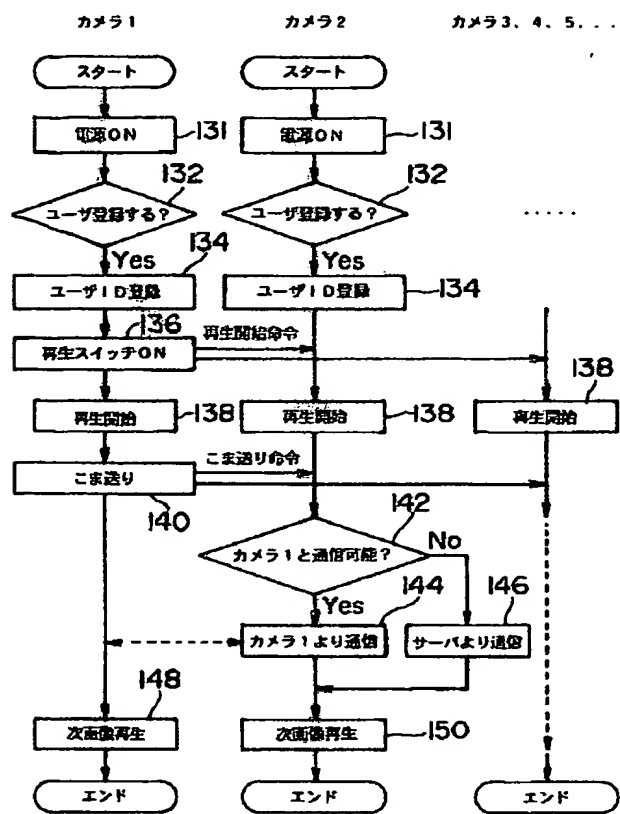
[Translation done.]

Drawing selection 

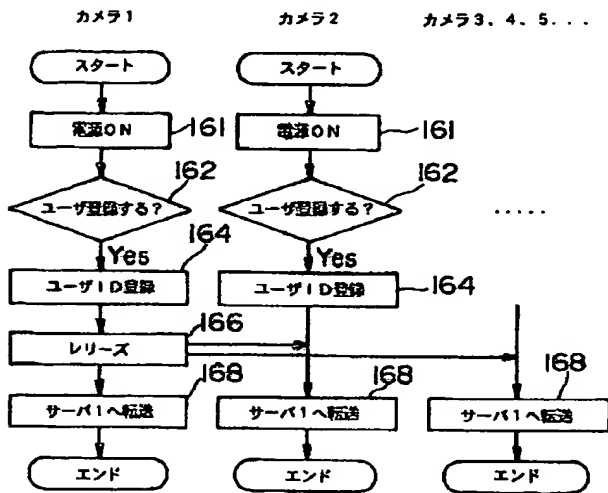
[Translation done.]

Drawing selection drawing 8

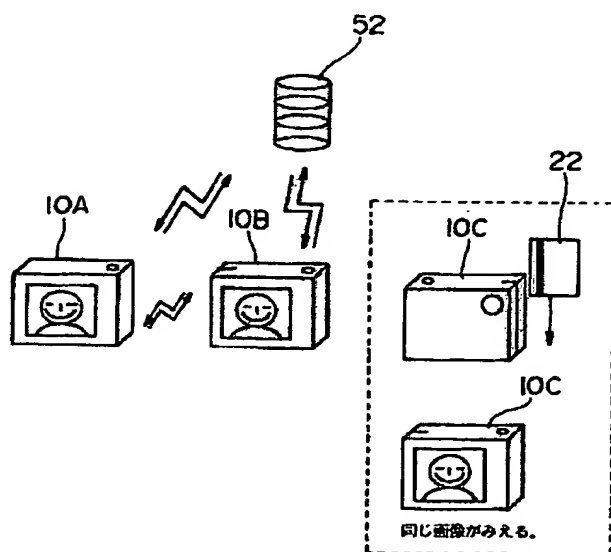
[Translation done.]

Drawing selection **drawing 9**

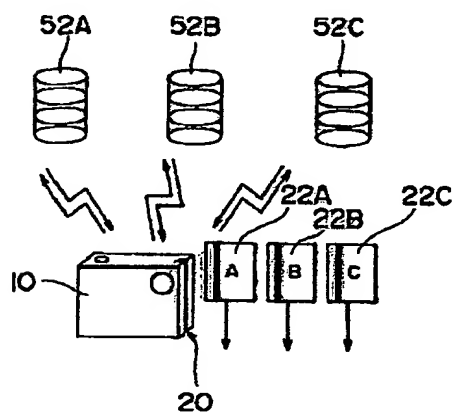
[Translation done.]

Drawing selection drawing 10

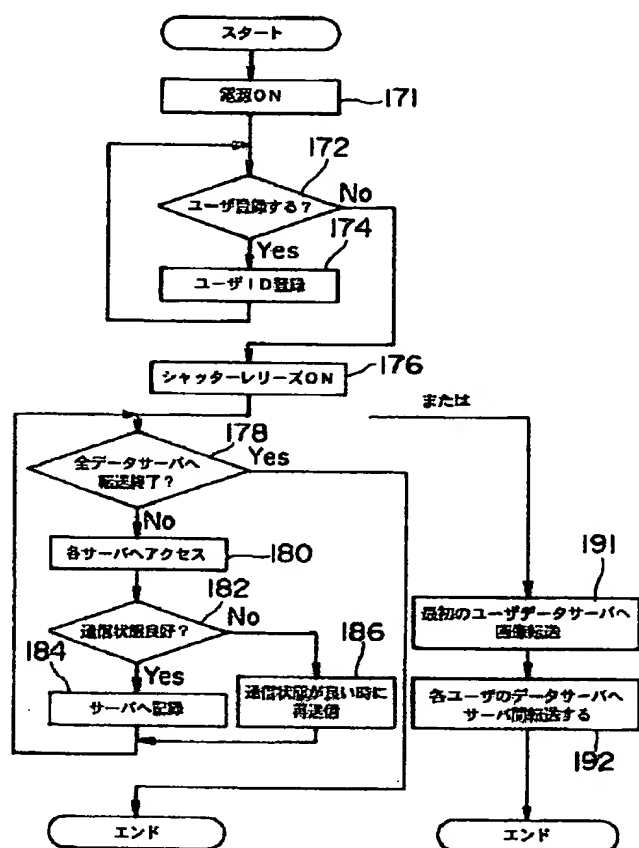
[Translation done.]

Drawing selection drawing 11

[Translation done.]

Drawing selection drawing 12

[Translation done.]

Drawing selection drawing 13

[Translation done.]